

10W, DC/DC Power Converter

SDU10H

SUMMIT
ELECTRONICS



Features

- Rated power: 10W Max
- Input voltage range 4:1
- Regulated output
- High efficiency up to 87%
- Isolation voltage 1.5KVDC
- Remote On/Off control
- Operating temperature range: -40 ~ +85°C ambient
- RoHS compliant
- Standard 2"x1" package
- Under voltage, over voltage, over current, and short circuit protection
- Meet IEC/EN/UL 62368-1
CISPR32, EN55032
- 3 year warranty

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Part numbers

Model Number	Input Voltage [VDC]			V _{OUT} [VDC]	Output Current [mA]		Efficiency [%] Typ.	Capacitive Load [uF] Max.
	Nom.	Range	*Max.		Max.	Min.		
SDU10H2403	24	9~36	40	3.3	2400	0	78	2200
SDU10H2405	24	9~36	40	5	2000	0	83	2200
SDU10H2409	24	9~36	40	9	1111	0	85	680
SDU10H2412	24	9~36	40	12	833	0	86	470
SDU10H2415	24	9~36	40	15	667	0	86	330
SDU10H2424	24	9~36	40	24	416	0	88	100
SDU10H2405D	24	9~36	40	±5	±1000	0	83	1000
SDU10H2409D	24	9~36	40	±9	±555	0	86	680
SDU10H2412D	24	9~36	40	±12	±416	0	87	470
SDU10H2415D	24	9~36	40	±15	±333	0	87	330
SDU10H2424D	24	9~36	40	±24	±208	0	87	100
SDU10H4803	48	18~75	80	3.3	2400	0	79	2200
SDU10H4805	48	18~75	80	5	2000	0	83	2200
SDU10H4812	48	18~75	80	12	833	0	87	470
SDU10H4815	48	18~75	80	15	667	0	87	330
SDU10H4824	48	18~75	80	24	416	0	88	100
SDU10H4805D	48	18~75	80	±5	±1000	0	83	1000
SDU10H4812D	48	18~75	80	±12	±416	0	87	470
SDU10H4815D	48	18~75	80	±15	±333	0	87	330
SDU10H4824D	48	18~75	80	±24	±208	0	87	100

* Input voltage exceed the Max. value may cause permanent damage.

* Only typical models are listed. Other models may be available upon request.

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Electrical characteristics

Unless otherwise indicated, specifications are measured at $T_A=25^{\circ}\text{C}$, nominal input voltage, full load after warm up.

Parameter	Condition	Min.	Type	Max.	Unit	Note
Input current	$V_{OUT}=3.3\text{V}$	-	423	-	mA	
Full load, $V_{IN, Nom}=24\text{V}$	Others		502			
Input current	$V_{OUT}=3.3\text{V}$		190	-	mA	
Full load, $V_{IN, Nom}=48\text{V}$	Others		251			
Input current	$V_{IN, Nom}=24\text{V}$		5	-	mA	
No load	$V_{IN, Nom}=48\text{V}$		4			
Reflected ripple current	$V_{IN, Nom}=24\text{V}$	-	40	-	mA	
	$V_{IN, Nom}=48\text{V}$		30			
Input voltage surge	$V_{IN, Nom}=24\text{V}$	-0.7	-	50	VDC	
1 second max	$V_{IN, Nom}=48\text{V}$	-0.7		100		
Startup input voltage	$V_{IN, Nom}=24\text{V}$	-	-	9	VDC	
	$V_{IN, Nom}=48\text{V}$			18		
Startup time	Resistive load	-	10	-	mS	
Input under voltage shutdown	$V_{IN, Nom}=24\text{V}$	5.5	6.5	-	VDC	
	$V_{IN, Nom}=48\text{V}$	12	15.5			
Remote On/Off control	Logic high	2.7	-	9	VDC	Positive Logic
"Ctrl" pin open or logic high [ON]	Logic low	0	-	1.2	VDC	
"Ctrl" pin grounded or logic low [OFF]	Ctrl pin current	-	5	10	mA	
Output voltage accuracy	$I_{OUT}=0\%$ to 100%	-	± 1	± 3	%	
Line regulation	Main output	-	± 0.2	± 0.5	%	

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Full load, $V_{IN}=V_{IN, Min}$ to $V_{IN, Max}$	Other output		± 0.5	± 1.0		
Load regulation	Main output	-	± 0.5	± 1.0	%	
$I_{OUT}=5\%$ to 100% of $I_{OUT, rated}$	Other output		± 0.5	± 1.5		
Cross regulation	Dual output models	-	-	± 5	%	
$+I_{OUT}=50\%$, $-I_{OUT}=10\%$ to 100%						
Output ripple and noise		-	40	80	mVp-p	
20MHz bandwidth, peak to peak						
Temperature coefficient	Full load	-	-	± 0.03	%/°C	
Dynamic load response	Peak deviation	-	± 3	± 5	% V_{OUT}	
$I_{OUT}=25\% \sim 50\% \sim 75\%$ of $I_{OUT, rated}$	Recovery time		300	500	μs	
Output over voltage protection		110	-	160	% V_{OUT}	
Output over current protection		110	140	190	% I_{OUT}	
Output short circuit protection		Continuous, automatic recovery				
Input filter		PI filter				
Hot plug		None				

* Operating with less than 5% of rated load will not cause damage to the converters, but the performances data may not fall into the specifications, and stable operating is not assured.

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General Specifications

Parameters	Condition	Min.	Typ.	Max.	Unit	Notes
Isolation voltage 1 minute, leakage current 1mA max.	I/P to O/P	1500	-	-	VDC	
Isolation resistance Tested at 500VDC	I/P to O/P	1000	-	-	M ohm	
Isolation capacitance 100KHz, 0.1V	I/P to O/P	-	2000	-	pF	
Switching frequency*	Full load	-	300	-	KHz	PWM mode
Operating temperature	See "Derating Curve"	-40	-	+85	°C	
Storage temperature		-55	-	+125	°C	
Storage humidity	None condensing	5	-	95	%RH	
Pin soldering resistance 1.5mm away from case for 10 sec		-	-	300	°C	
Cooling method		Free air convection				
Case material		Aluminum alloy				
Vibration		IEC/EN61373 – Category 1, Grade B				

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MTBF	MIL-HDBK-217F	>1,000,000 Hours, T _A =25°C
Design based on standards		IEC/EN/UL 62368-1
Safety certifications		IEC/EN 62368-1
EMC		CISPR32, EN55032 Class B with external circuit IEC/EN61000-4-2, 3, 4, 5, 6
Size, and Weight		50.8 x 25.4 x 12 mm, 30g

* Switching frequency is measured at full load. The converter reduces the switching frequency at low load (less than 50% load) for better efficiency.

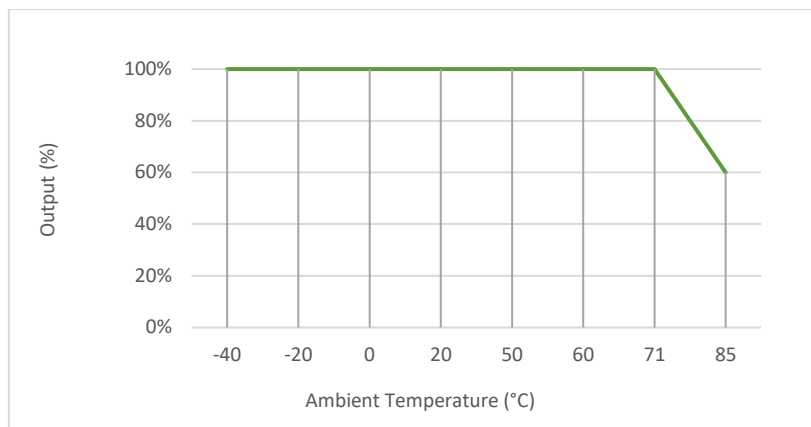
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Characteristics Curves

Derating Curve



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Recommended External Circuit

Typical Application Circuit

*Typical application circuit is to further lower the input and output ripple. It is not required for general use.

*Recommended component specifications are typical values. Excessive external capacitive load may cause startup problem.

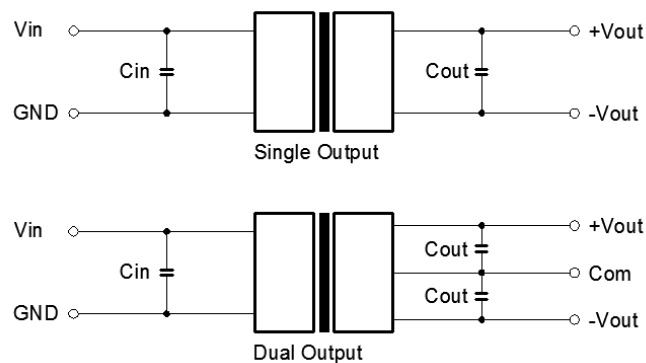


Figure 1: Typical External Circuit

Recommended component spec

Input voltage	24V	48V
C_{IN}	100uF, 50V	10...47uF, 100V
C_{OUT}	10uF	10uF

EMC Enhancement for EN55032 Class B

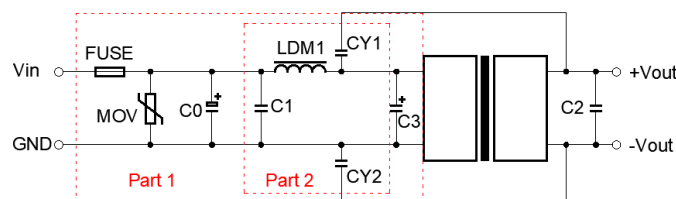


Figure 2. Circuit for EMC enhancement

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Recommended component spec

Component	LDM	MOV	C0, C3	C1	CY1, CY2
V_{IN}=24V	4.7uH	20D470K	330uF, 50V	1uF, 50V	1nF, 2KV
V_{IN}=48V	4.7uH	14D101K	330uF, 100V	1uF, 100V	1nF, 2KV

* Fuse to be selected according to application needs.

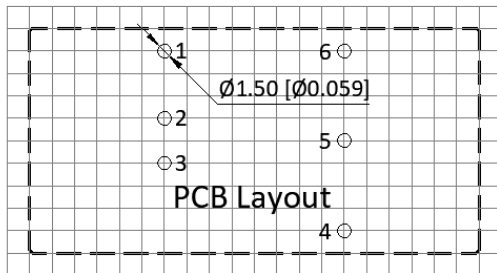
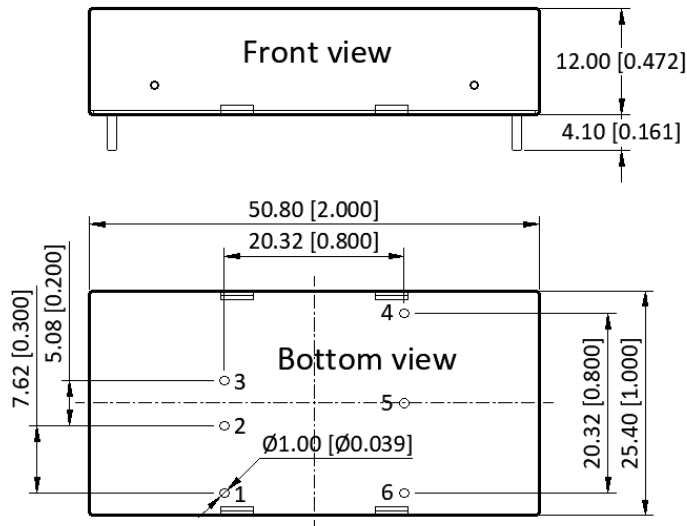
* C2 refer to relative C_{OUT} values in Table 1.

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Mechanical Specifications



Pin Definition

Pin #	Single Out	Dual Out
1	Ctrl	Ctrl
2	GND	GND
3	V _{IN}	V _{IN}
4	+V _{OUT}	+V _{OUT}
5	NO Pin	COM
6	0V	-V _{OUT}

* Unless otherwise specified unit:
mm [inch]

* General tolerance: ± 0.50 [± 0.020]

* Pin thickness: ± 0.10 [± 0.004]

* Footprint grid 2.54 x 2.54 mm

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Ordering information

Ordering can be done via www.summit-electronics.com or via info@summit-electronics.com. Please contact us for more information. Customisation of the product is available on request.

Technical support

For all product questions please contact us via info@summit-electronics.com

Document revision

Rev	Date	Changes
2025v0.1	25-08-2025	First issue of document